NORTHEASTERN FOREST PEST REPORTER

United States Department of Agriculture
Forest Service Region Seven

6816 Market St., Upper Darby, Pa.

Pest Control Zone Offices
Amherst, Mass.
Harrisonburg, Va.

JMBER 3 December, 1964

FOREWORD

This issue of the Northeastern Forest Pest Reporter summarizes the Region's major forest insect and disease problems for 1964. The information will be useful in planning the detection program for 1965.

Detection from the air was intensified. Pennsylvania and New Jersey initiated for the first time a Statewide aerial detection program, which resulted in the discovery and delineation of several infestations. Maine, Vermont and Virginia continued aerial surveys for specific insect problems.

Aerial detection is an integral part of a well rounded detection program and its use in the Region is being expanded.

AGRICULTURE — MCELWEE, PHILA., PA.

SPRUCE BUDWORM (Choristoneura fumiferana)

Approximately 58,100 acres of spruce-fir in northern Aroostook County, Maine, were aerially sprayed in 1964 to suppress high populations of the spruce budworm. Dosage of 1/2 lb. DDT in 1/2 gallon fuel oil per acre was applied twice to most of the control area. The reason for the separate applications was to obtain maximum effectiveness. Budworm larvae on fir are vulnerable to spray several days before they are equally vulnerable on spruce.

Larval populations were reduced by approximately 96 percent. In sensitive areas such as around small ponds the first 100 feet back from the shoreline were left unsprayed and the next 100 feet received only a single half pound (DDT) dosage. Along the major rivers a 200 foot buffer strip back from each shoreline also received only the single dosage. No immediate adverse effects to either fish or wildlife were observed by Maine fish and game biologists. Laboratory analyses of samples taken in the field will be carried out at a later date to determine any insecticide residues.

The decision not to spray in Maine in 1965 was based on low budworm populations and a high incidence of egg and larval parasitism. A large number of spruce budworm moths were collected in a black-light trap near Dover, New Hampshire, in July. Extensive surveys will be made in this area in 1965.

A field test using malathion was carried out against the spruce budworm in northern Aroostook County, Maine. The main purpose of this test was to obtain comparative data for malathion and DDT when both were applied under similar conditions.

Four different malathion treatments were applied to distinct spray blocks ranging in size from 140 to 417 acres. Treatments were as follows:

1. One-half pound of actual malathion per gallon of spray per acre.

2. One pound of actual malathion per gallon of spray per acre.

3. Two applications of one-half pound in one gallon, totalling one pound in two gallons per acre.

4. A concentrated application (e.g. 95 percent technical malathion) applied directly, undiluted, at the rate of one pint (1.2 pounds) per acre.

Budworm population reductions were assessed at about 70 percent on treatments 2 and 4, with reductions of only 50-55 percent on treatment 1. Treatment 3 did not improve the 50-55 percent figures. Results of these tests indicate that higher concentrations of malathion will be needed to achieve control similar to that obtained with DDT. Since the undiluted malathion concentrate gave as effective control (70 percent) as the one-half pound per gallon dosage, future tests should emphasize this formulation.

A two-year study to determine the effect of these malathion applications on aquatic insects is being financed by the Conservation Foundation of New York City. The actual study is being carried out by Robert Downes, a graduate student, whose data will be available after the 1965 analyses.

GYPSY MOTH (Porthetria dispar)

Variable defoliation by this insect was reported over most of the Northeast. Declines in populations were evident in Maine, New Hampshire, Vermont and Rhode Island, while increased defoliation was observed in Connecticut, New York, New Jersey and Pennsylvania. Limited control operations were carried out in Vermont, Rhode Island, Massachusetts, New York and Pennsylvania.

Based on egg mass surveys extensive defoliation is expected in New York in 1965. Limited control operations may also be necessary in Rhode Island. The National Park Service is concerned about an infestation of this pest within the boundaries of the Cape Cod National Seashore area, in Massachusetts. If biological evaluations indicate a need for control, the insecticide Sevin may be recommended.

FOREST TENT CATERPILLAR (Malacosoma disstria) Map 1

In Maine defoliation of scattered poplar stands in the Presque Isle - Caribou area has increased in severity since 1963, however, most of the area currently infested is interspersed with large potato fields or cleared land. Increased defoliation was also noted in the unbroken woodland area northwest of Patten (specifically around Horse Mountain near Matagamon Lake). Elsewhere in northern Maine light populations were noted. From the reports received this year it would appear that the forest tent caterpillar is definitely increasing in severity and extent throughout northern Maine.

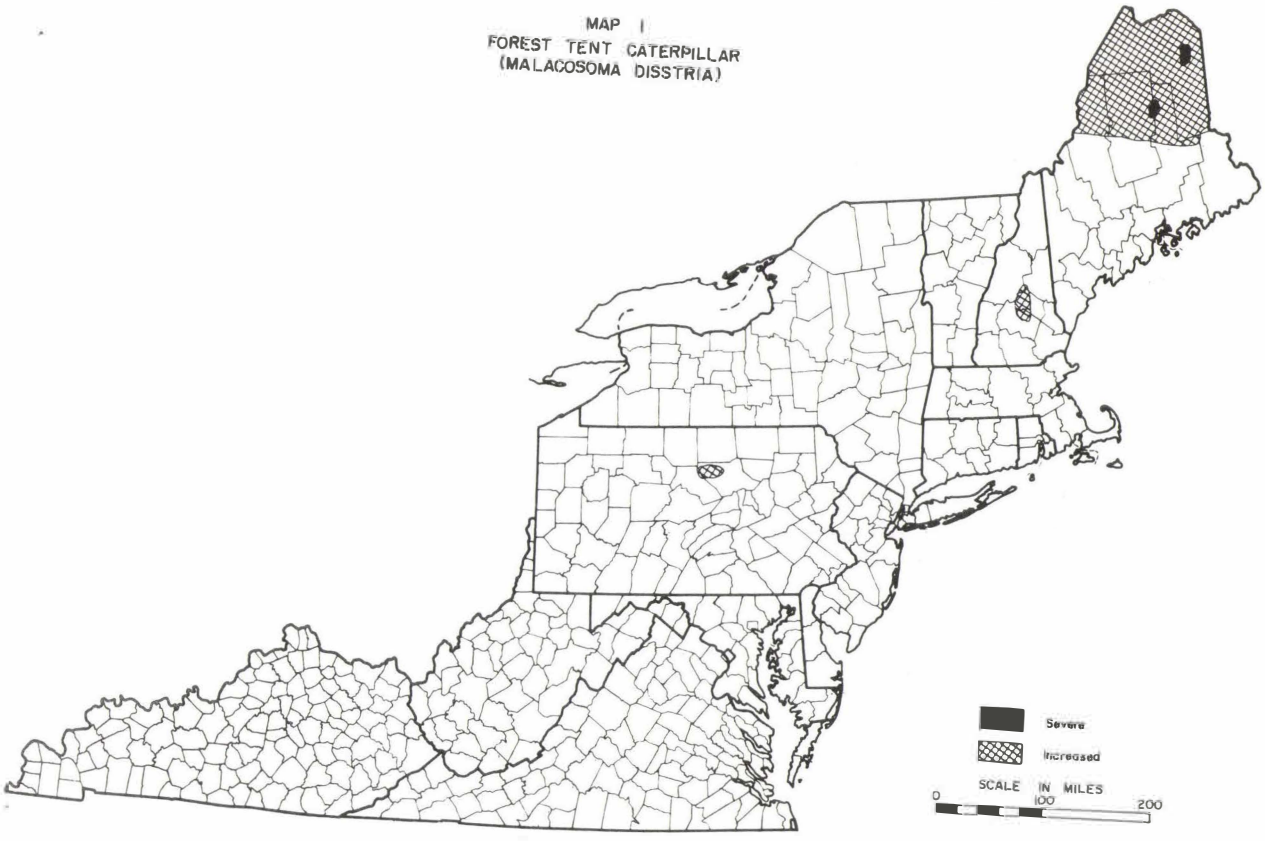
Population increases were reported in central New Hampshire and from Lycoming County and northeastern Clinton County in Pennsylvania. Throughout the rest of the Region endemic populations continued with no significant increase being reported.

FALL CANKERWORM (Alsophila pometaria) Map 2

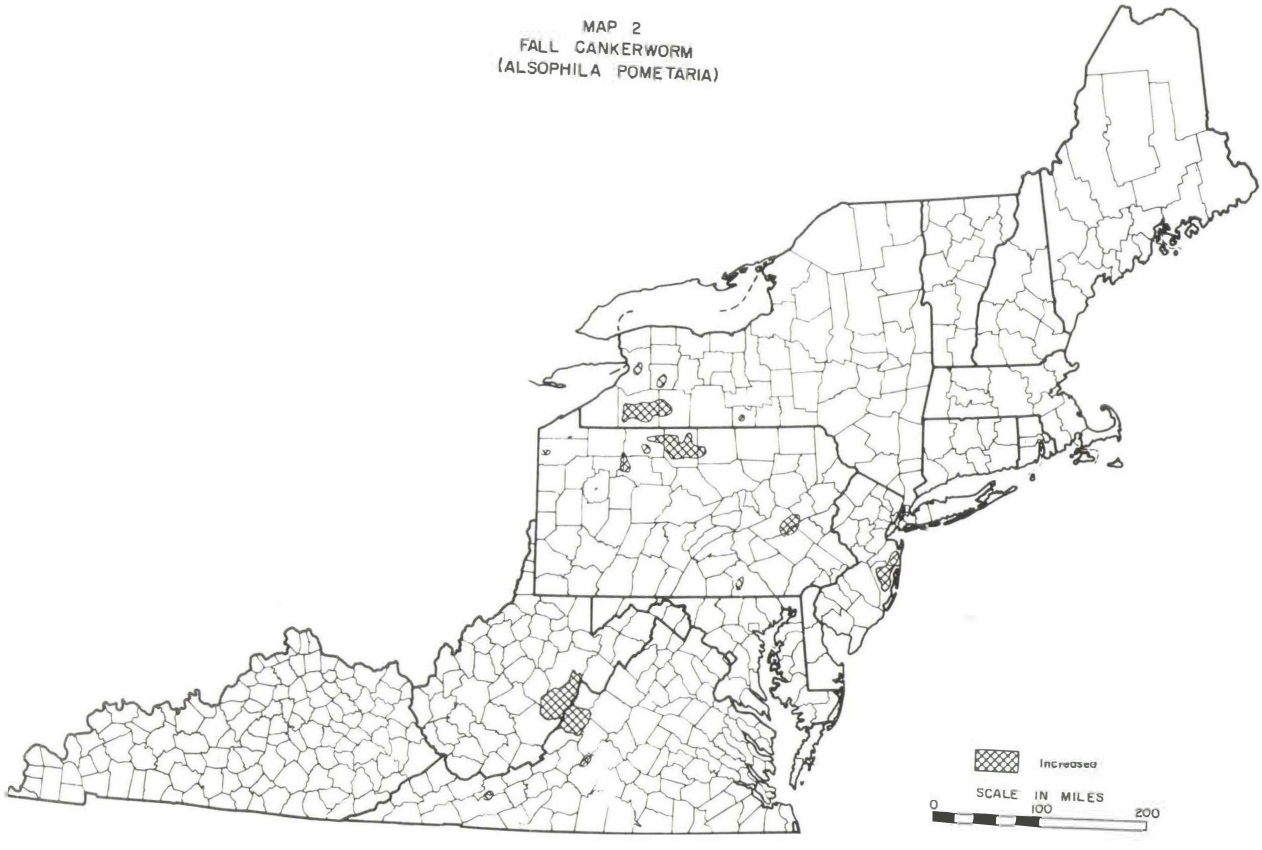
A sudden buildup of the fall cankerworm over the past 2 or 3 years has resulted in heavy defoliation of valuable northern hardwoods in southwestern New York and north central Pennsylvania. Practically all hardwoods (maple, beech, birch, black cherry, ash, elm, ironwood, oak and hickory) were attacked. Stands on ridge tops and sides exhibited the heaviest damage. Poor results were obtained from pupal surveys made during this past summer and fall. The pupae enclosed themselves in a small soil-covered cocoon making it difficult to distinguish them from soil particles. Predator activity appeared heavy, evident from the abundance of shrew-like tunnels and many predatory Calosoma beetles. Moth flights of the fall cankerworm and linden looper were observed in late October and were reported as being extremely heavy during the first two weeks of November.

In New York the heaviest defoliation by the fall cankerworm occurred in the Ellicottville-Great Valley area of Cattaraugus County. In Pennsylvania, based on an extensive aerial survey, approximately 400,000 acres of hardwoods were found to be heavily defoliated in Potter and McKean Counties. Light to moderate defoliation was also observed on the Ridgway Ranger District on the Allegheny National Forest and in Cameron and Crawford Counties. In addition, light defoliation was found in the northeastern part of the State. Accompanying the fall cankerworm but playing a subordinate role were the linden looper (Erannis tiliaria), the elm spanworm (Ennomos subsignarius), Bruce spanworm (Operophtera bruceata), and the spring cankerworm (Paleacrita vernata).

MAP 1
FOREST TENT CATERPILLAR
(MALACOSOMA DISSTRIA)



MAP 2
FALL CANKERWORM
(ALSOPHILA POMETARIA)



In New Jersey small, scattered fall cankerworm populations were observed throughout most of the State. Heavy defoliation on 6100 acres was reported from Monmouth and Ocean Counties.

During field investigations of the egg-laying behavior of the fall cankerworm in northern hardwoods in Potter County, Pennsylvania, it was found that egg deposition differed from that observed on oaks and elm. Instead of the eggs being laid in large masses of 100 or more eggs on the smaller branches in the crown extremities, it was found that individual and small clusters of two, three, four, or more eggs were scattered on the bark over the entire length of the bole, and on the larger branches of the crown. This oviposition phenomena will be investigated further by the entomologist of the Pennsylvania Department of Forests and Waters.

The trend of these cankerworm infestations and the extent of defoliation in 1965 is not presently known. However, egg mass surveys to evaluate these outbreaks are now in progress. Preliminary estimates are that approximately 100,000 acres of northern hardwoods in Pennsylvania and 2000 acres of oaks in New Jersey may be considered for control in 1965.

Throughout the remainder of the Region only endemic populations of fall cankerworm were reported. Scattered defoliation was observed along the Blue Ridge Parkway and on the Jefferson and George Washington National Forests in Virginia and on the Monongahela National Forest in West Virginia.

A LOOPER (Phigalia titea)

Light defoliation of oaks by Phigalia along with the fall and spring cankerworms was reported from Schuylkill, northern Berks, Carbon, Monroe, and Pike Counties in Pennsylvania. Heavy defoliation of oaks and hickories continued in northwestern Virginia, chiefly on the George Washington National Forest. This is the third year of heavy defoliation in this area. Some top mortality is now evident. Continued defoliation coupled with the current drought will accelerate the deterioration of the affected stands.

HEMLOCK LOOPER (Lambdina fiscellaria fiscellaria)

An isolated stand of approximately 25 acres of hemlock near Woolwich, Maine, was totally stripped by the hemlock looper this past summer. White spruce, maple, oak, and shagbark hickory were also defoliated. Aerial and ground surveys of the surrounding area did not detect any other defoliation, although adult moths were common in September and October. Pupal collections indicated heavy parasitism of the 1964 brood. A localized infestation in Tiverton, Rhode Island, apparently declined in 1964. Ground and aerial surveys are planned for 1965 in both States.

WHITE PINE WEEVIL (Pissodes strobi)

Damage by this weevil was variable throughout the range of its host. In southwestern Maine and central New Hampshire an increase in damage was observed. However, a general decline was noted throughout the Region. The lack of a heavy snow cover last winter to protect the over-wintering adults was believed to have been a contributing factor in the population decline.

Weevil control projects were undertaken in Maine, Pennsylvania and New York with variable results. In Pennsylvania satisfactory control was achieved on 150 acres treated last spring with DDT. In New York a fall treatment during 1963 using lindane and aroclor with a truck mounted mistblower and knapsack sprayers gave poor results.

In a special field test on the Massabesic Experimental Forest in Alfred, Maine, a 20 acre and a 70 acre area of white pine were sprayed on May 12 by helicopter. Data collected from pre- and post-spray samples indicated a 6.9 to 2.2 percent and an 18.2 to 4.6 percent reduction in weevilling on the two areas, respectively. The finished spray solution (1 pound of DDT in 1 gallon of No. 2 fuel oil - 12-1/2 percent solution) was applied twice making the total application per acre of 2 pounds of DDT in 2 gallons of oil. The double application was used to obtain better spray coverage. Both areas, were previously (1955) treated with 2,4,5-T to remove competing hardwoods. These areas consisted of natural and planted white pine intermixed with balsam fir, pitch pine and small hardwoods. The white pine varied in height from 3 to 15 feet with the height of the dominant trees averaging 10 to 12 feet.

LARCH SAWFLY (Pristiphora erichsonii) Map 3

Defoliation of larch by this insect is increasing in central and northeastern Maine. Heavy feeding was recorded in the Jackman-Bingham area of west central Maine. Coastal areas in eastern Maine also exhibited pronounced defoliation. Marked trees in Penobscot County averaged 27 percent defoliation of all trees tallied in 1962, 50 percent in 1963, and 77 percent in 1964. In Acadia National Park on Mount Desert Island a larch stand of approximately 170 acres was totally stripped in 1964. Considerable acreage of larch exists on Mt. Desert Island and control may be desirable if the outbreak continues.

Light to medium populations of the larch sawfly were reported in natural larch stands in Franklin and Essex Counties in New York. Increasing populations ranging from light in some areas to heavy in others were also observed in plantations in Albany, Washington, Rensselaer, Columbia and Steuben Counties. Elsewhere in the State no unusual sawfly activity was reported.

In Pennsylvania the larch sawfly was more widespread this season than in previous years, causing moderate to severe defoliation throughout the central part of the State. In West Virginia a decline in sawfly populations was reported on the Greenbrier Ranger District, Monongahela National Forest.

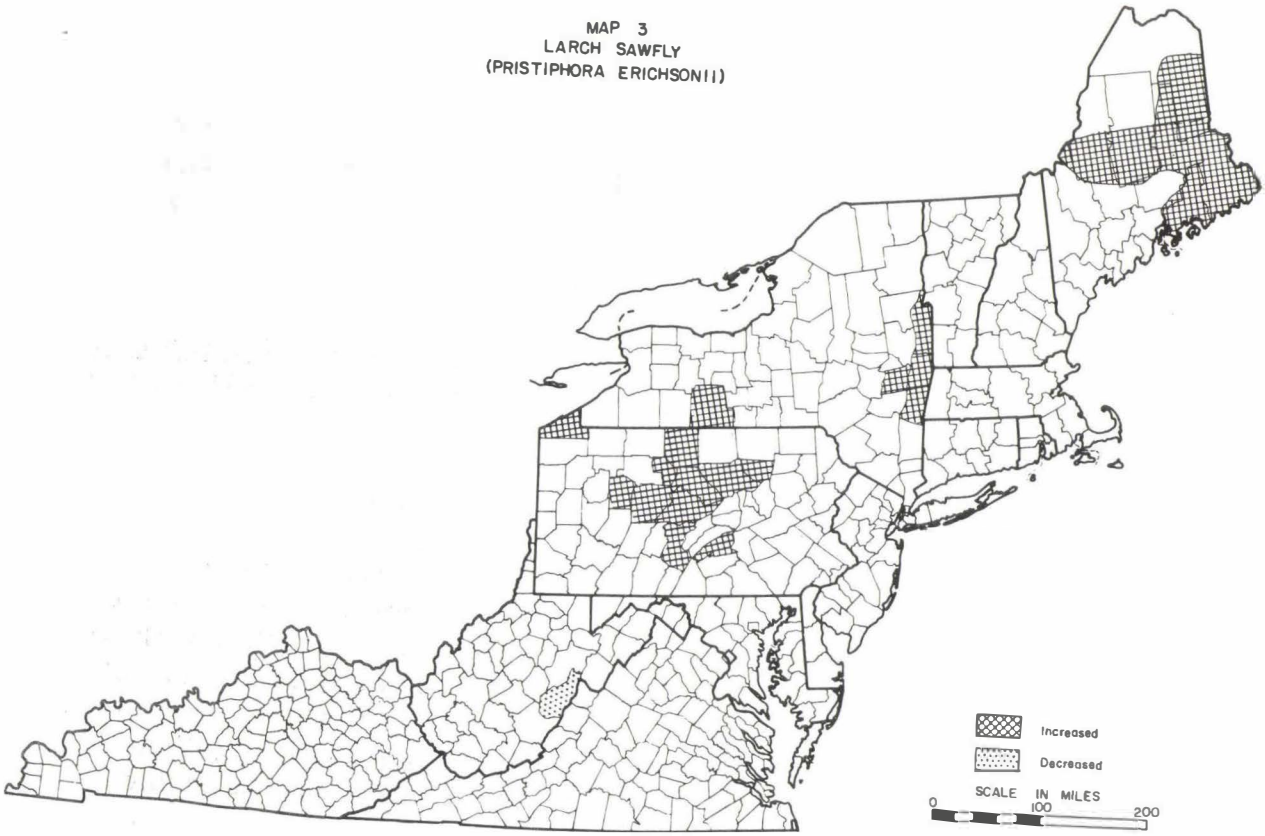
RED-HEADED PINE SAWFLY (Neodiprion lecontei) Map 4

A general increase in populations of N. lecontei observed in Vermont, Rhode Island, and New York. Most of the damage occurred in red pine plantations, although, Pennsylvania reported a larch stand in Indiana County 50 percent defoliated. Light to moderate defoliation was also observed on Scotch pine in Greene County, mugho pine in Somerset County, and jack pine in Jefferson County.

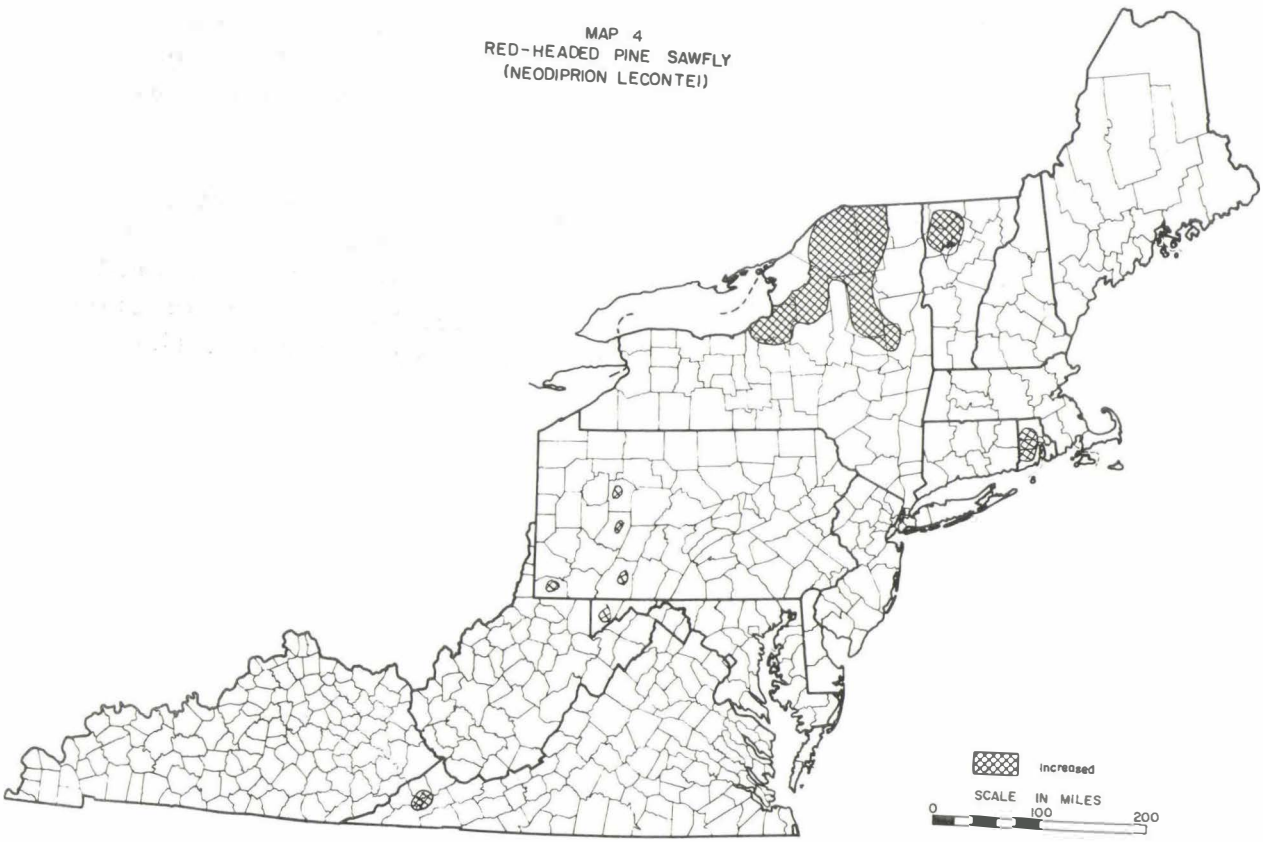
Control measures were required in some plantations in Vermont and New York to prevent serious damage. The New York infestation (about 400 acres) was sprayed by aircraft with one pound of DDT in fuel oil at the rate of one gallon per acre. Control was satisfactory except where power lines and other obstacles prevented optimum coverage.

A general decrease in Red-headed pine sawfly populations was reported from New Jersey, Maryland, Virginia and West Virginia.

MAP 3
LARCH SAWFLY
(PRISTIPHORA ERICHSONII)



MAP 4
RED-HEADED PINE SAWFLY
(NEODIPRION LECONTEI)



VIRGINIA PINE SAWFLY (Neodiprion pratti pratti) Map 5

A marked increase in sawfly populations was reported from eastern Virginia,in Boone County, West Virginia, and on the Morehead Ranger District of the Cumberland National Forest. In Virginia some stands experienced more than 50 percent defoliation, however, most of the defoliation reported was less than 20 percent.

Of special interest was the recovery of the pupal parasite (Dahlbominus fuscipennis) from pupal cocoons collected in the 1960 and 1961 parasite release areas in Virginia.

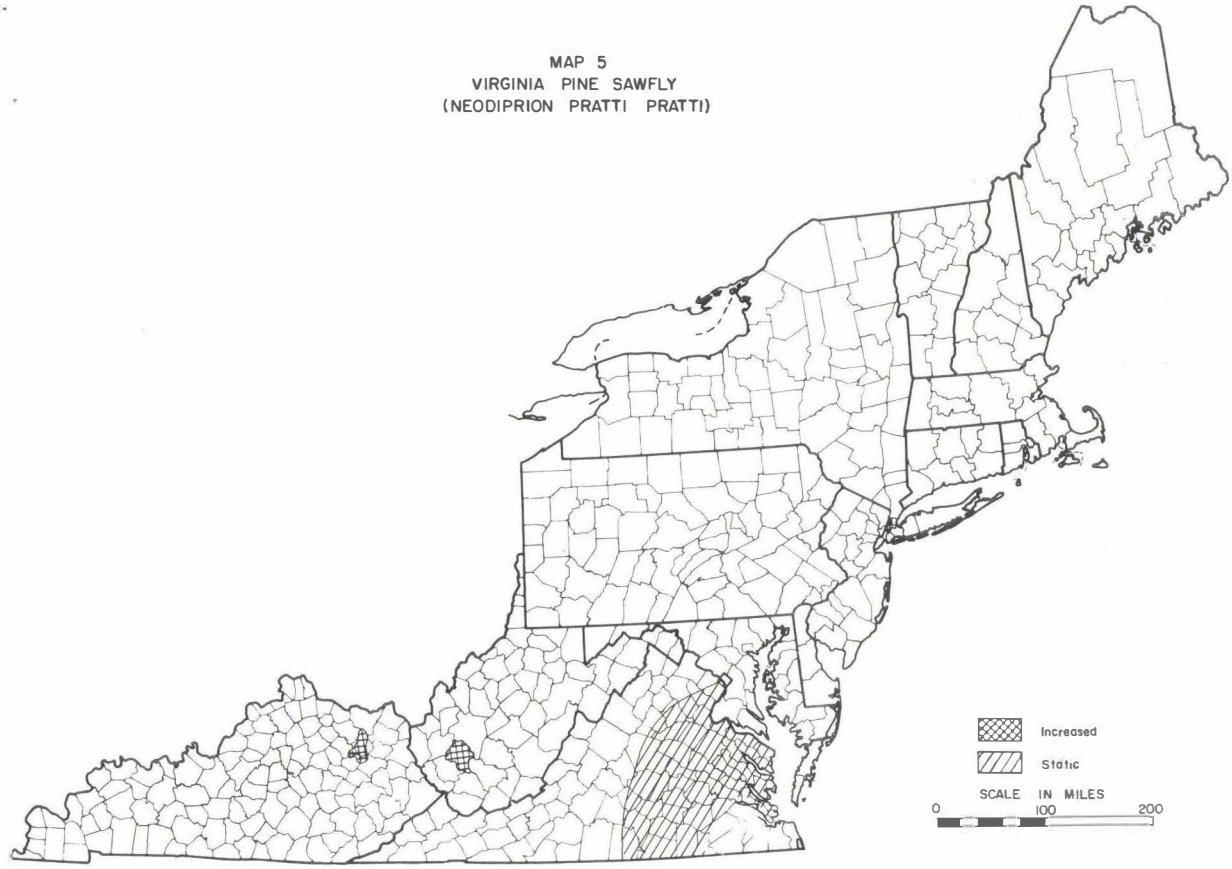
EUROPEAN PINE SAWFLY (Neodiprion sertifer) Map 6

Moderate to heavy, scattered infestations of the European pine sawfly were observed in plantations of Scotch and red pines in many areas of New York. This sawfly was found on Tug Hill in northern New York for the first time where Scotch pine appeared to incur the heaviest attacks. Control was necessary in several Christmas tree plantations in western New York. One small area in Dutchess County was sprayed with a polyhedrosis virus preparation. Results of this treatment are unknown at this time.

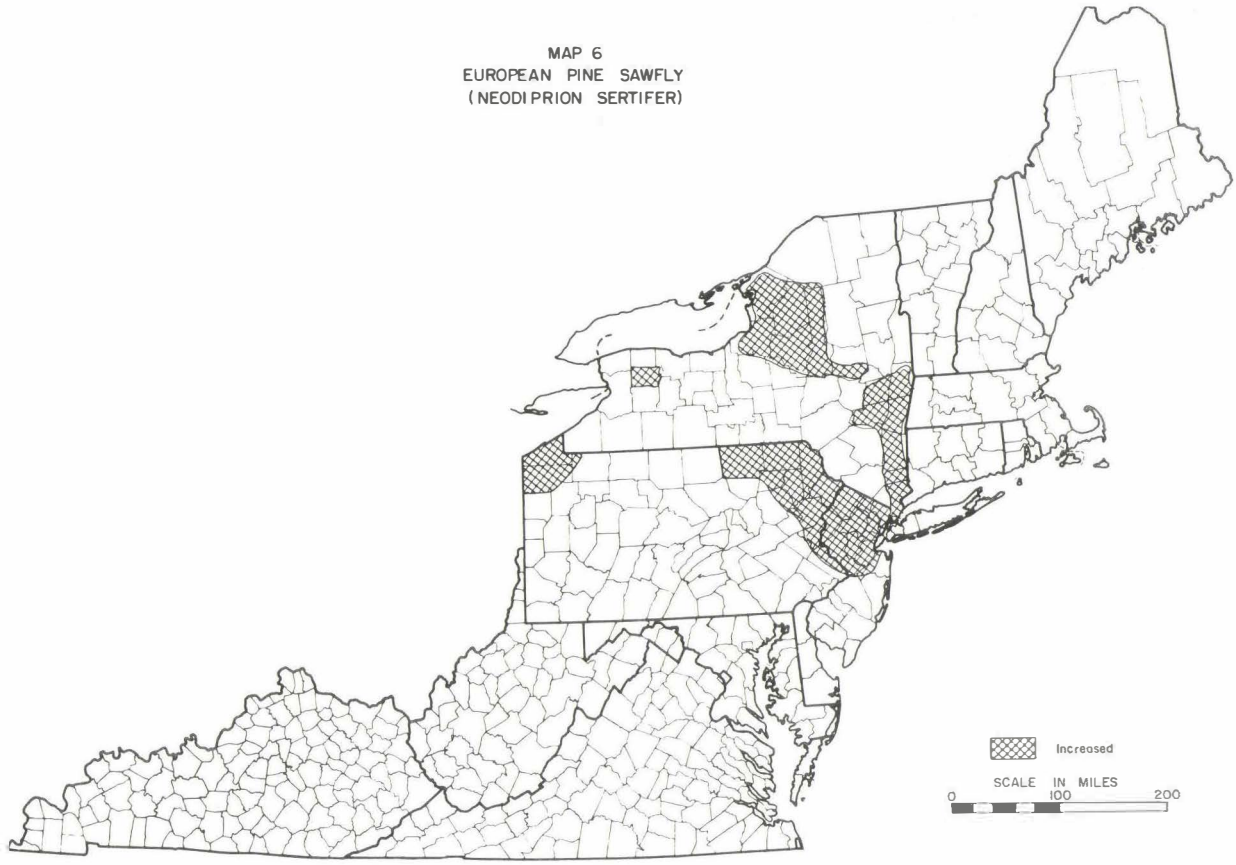
The European pine sawfly infestation in northwestern Pennsylvania was reported as the most serious ever recorded in that part of the State. Populations also increased substantially in the northeastern section. Light to moderate defoliation of red pine was observed in Morris and Bergen Counties in northern New Jersey.

Control operations were carried out in all three States. In Pennsylvania, 40 acres of red, Austrian and Scotch pines were aerially sprayed with 1-1/4 lbs. of DDT dust per acre with excellent results. An additional 95 acres in Pennsylvania, 53 acres in New Jersey and smaller acreages in New York were aerially sprayed with the polyhedrosis virus, also with excellent results.

MAP 5
VIRGINIA PINE SAWFLY
(NEODIPRION PRATTI PRATTI)



MAP 6
EUROPEAN PINE SAWFLY
(NEODIPRION SERTIFER)



OAK LEAF-MINING SAWFLY (Profenusa sp.) Map 7

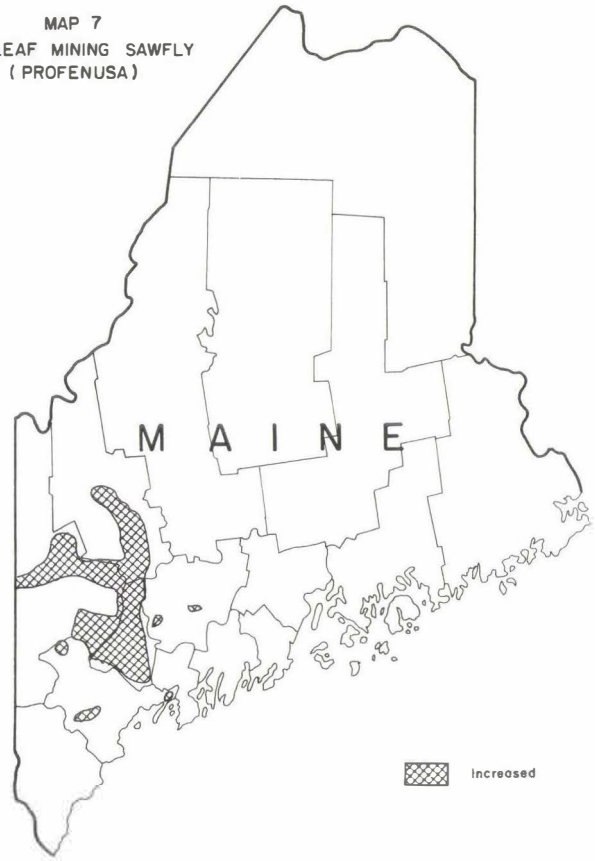
A suspected new species of this genus of sawflies has caused widespread browning of oak foliage in western Maine. Detailed life history studies by personnel of the Maine Forest Service have established the time of egg hatch, larval feeding period, parasitism, method of pupation and other pertinent information. So far as is known there is but a single generation per year. Eggs are laid in late spring and early summer on the undersides of the leaves. Larval development, and resultant leaf mining, is rapid once egg hatch occurs. Only the females have been observed. In severe attacks egg deposition per leaf produced more larvae than the leaf can support. Parasitism of eggs by (Trichogramma spp.) is common but larval parasitism is not. Upon completion of the leaf mining period the larvae drop to the ground and overwinter as prepupae in the soil. Leaf mining is most prominent in late July. All species of oaks are damaged with an apparent preference shown for the red oak group. Aerial surveys during 1964 showed damage to be more widespread in the Androscoggin Valley than in 1963. Defoliation was observed in the following counties: southern Franklin, east central Oxford, in Androscoggin south to Brunswick and in south central Kennebec. There is evidence that leaf mining by the sawfly coupled with a general rainfall deficiency over the past several years may result in appreciable growth loss and top mortality. Studies to determine larval instar development and possible affect on tree growth will be continued by the Maine Forest Service in 1965.

BIRCH LEAF MINER (Fenusa pusilla) Map 8

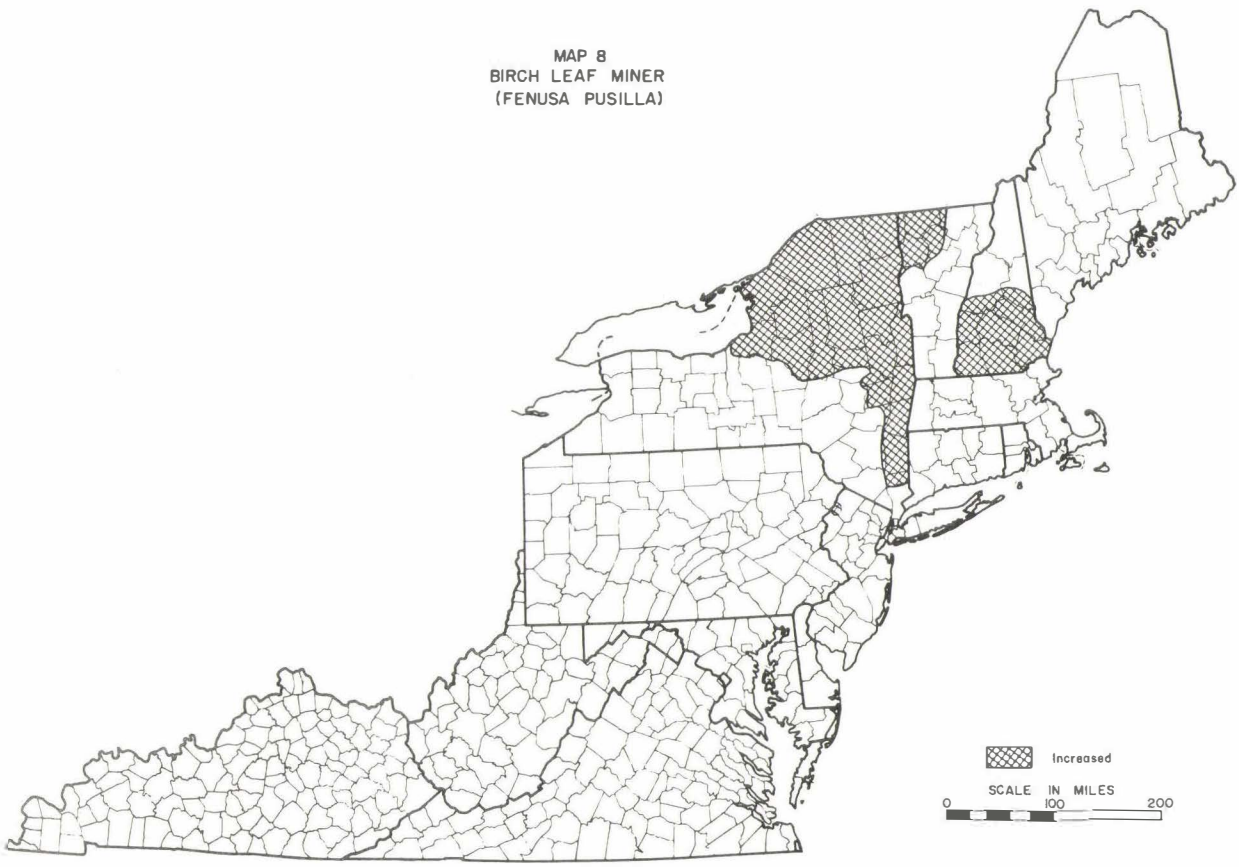
Severe browning of gray and white birch by Fenusa pusilla was common throughout southern New Hampshire, northwestern Vermont, and northern and eastern New York. General field observations in New Hampshire indicated that mining by the early generations of F. pusilla had a greater affect on the host than the mining of later generations.

Excellent control of F. pusilla was achieved in New York with a mist-blower application of a 2 percent Sevin-water solution applied at two week intervals from May 15 to July 1.

MAP 7
OAK LEAF MINING SAWFLY
(PROFENUSA)



MAP 8
BIRCH LEAF MINER
(FENUSA PUSILLA)



BIRCH LEAF-MINING SAWFLY (Profenusa thomsoni)

This birch leaf-miner caused severe browning of white birch throughout the general Androscoggin Valley area. Its presently known distribution coincides with that of the oak leaf-mining sawfly as shown on Map 7. Damage to white birch by Profenusa thomsoni was spotty, but gray birch was severely attacked. Damage to gray and white birch by this leaf-miner is often mistaken for that caused by Fenusa pusilla which is also common over much of the range of gray birch in central and southern Maine.

OAK-LEAF TIERS (mainly Croesia (Argyrotoxa) semipurpurana) Map 9

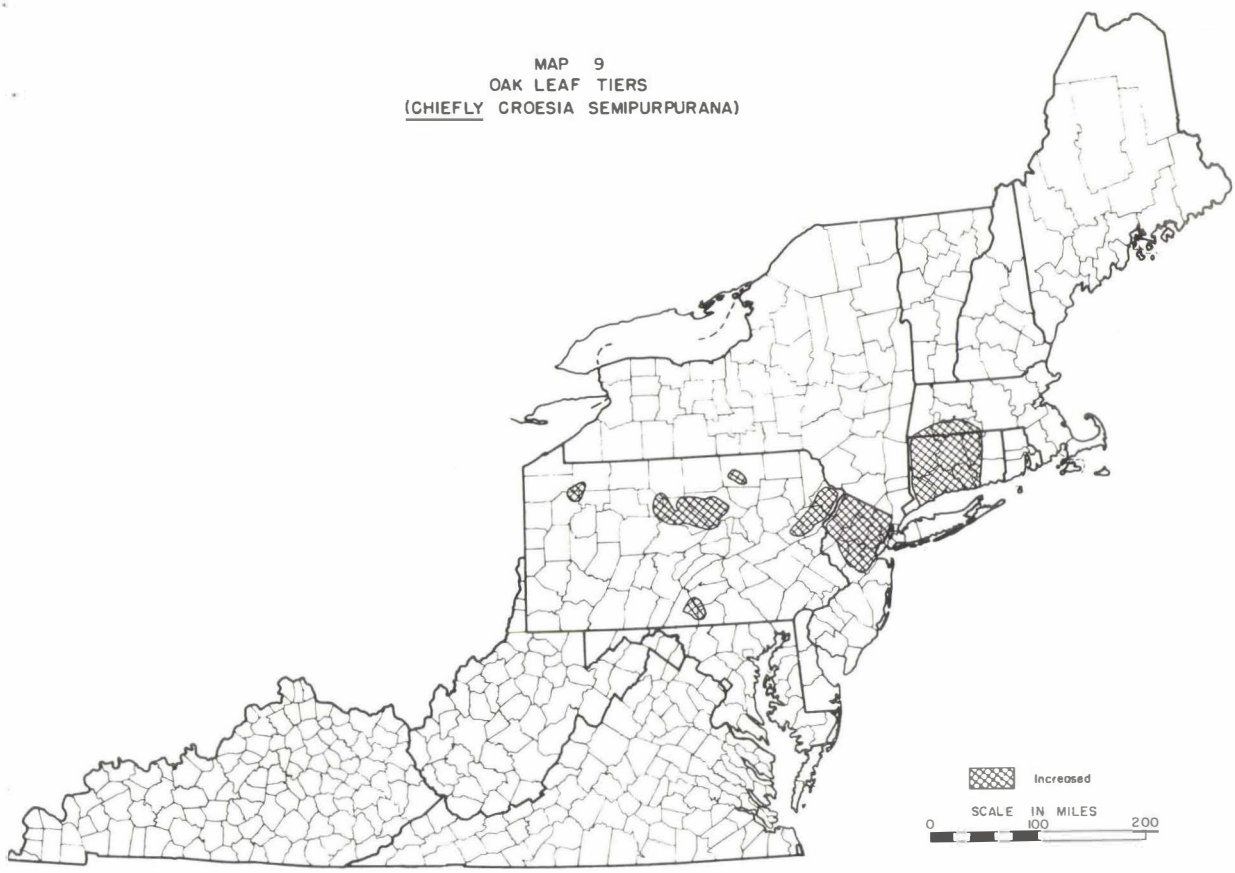
Two or more successive years of defoliation by the oak-leaf tiers has resulted in the decline and mortality of oaks in many parts of Vermont, Massachusetts, Connecticut, New Jersey and Pennsylvania. Although these areas have experienced several years of drought it is believed the oak-leaf tiers are the principal causal agents. However, contributing to the overall problem are various unknown edaphic factors, shoestring root-rot fungus (Armillaria) and the two-lined chestnut borer (Agrilus bilineatus).

Some decline of the oak-leaf tier populations was noted in northwestern Connecticut, but in general they appear to be on the increase in other areas. Suppression on 300 acres in New Jersey is being considered for 1965.

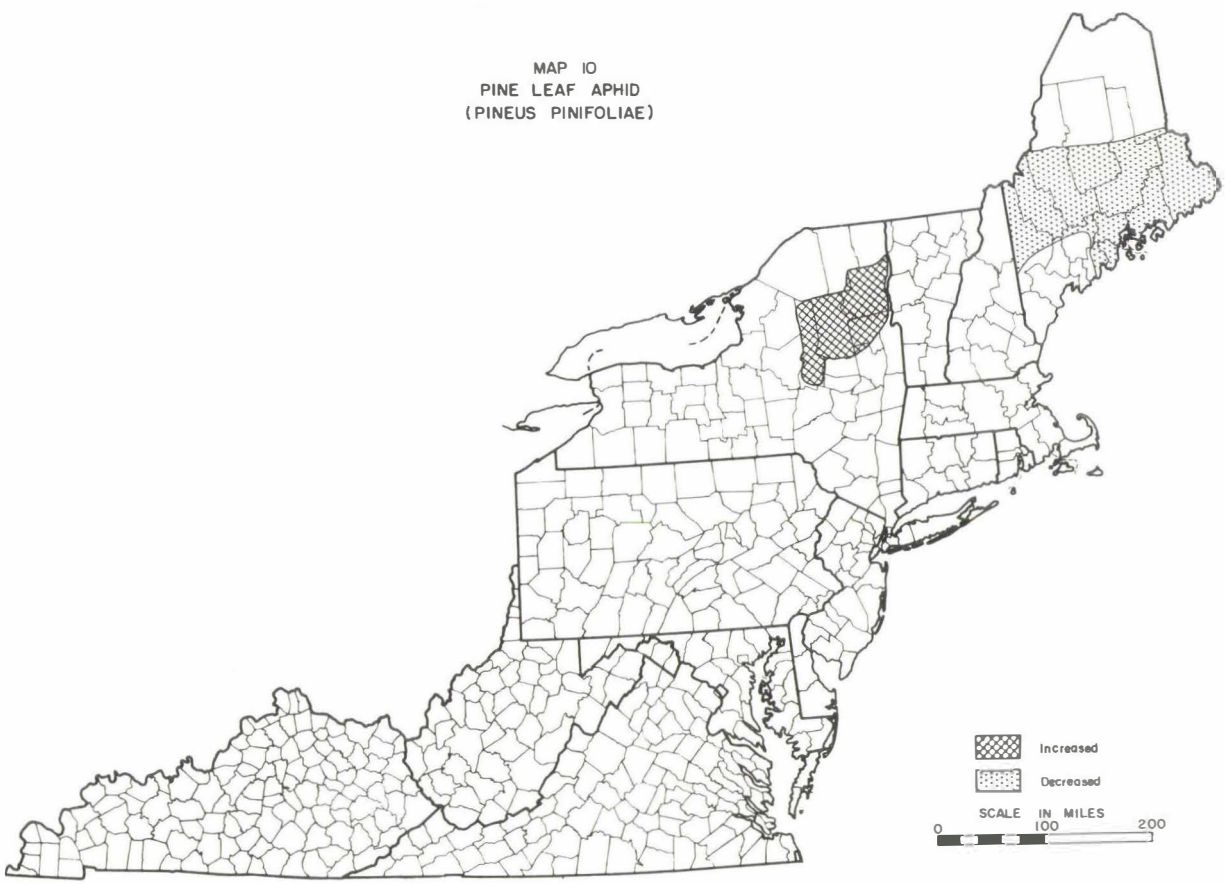
PINE LEAF APHID (Pineus pinifoliae) Map 10

The biennial survey conducted this fall in eastern and central Maine indicated that pine leaf aphid damage had decreased since 1962 when a similar survey was conducted, although severe damage to white pine in some areas of eastern Washington County has occurred. White pine heavily damaged and disfigured in central and northern New Hampshire has shown good foliage recovery this year. In the Swift River Valley of the White Mountain National Forest white pine continues to show recovery from previous tip injury. Isolated increases in damage were noted, however, in northern New Hampshire.

MAP 9
OAK LEAF TIERS
(CHIEFLY CROESIA SEMIPURPURANA)



MAP 10
PINE LEAF APHID
(PINEUS PINIFOLIAE)



In many areas in Vermont twig damage from the 1963 attack was still very apparent on young white pine. Trees growing on poor sites, that were heavily damaged in 1963, were in very poor condition this year. Since aphid feeding was largely restricted to red and black spruce (the alternate host species) a regular survey to determine insect populations and damage was not carried out this year. Populations of the pine leaf aphid have been on the increase in central New York since 1955. All sizes and age classes of white pine have been attacked, especially those stands contiguous to red and black spruce.

A mistblower spray test using a 1% Cygon-water solution was conducted in an 18 acre white pine stand in Saratoga County, New York. Although the test has not yet been fully evaluated, preliminary field observations indicate promising results.

RED PINE SCALE (Matsucoccus resinosae) Map 11

This important pest of red pine continued its slow spread in 1964. Over the past three years the scale has spread an estimated five miles in an east-west direction. The northward spread, however, has been considerably less. The current known distribution of the scale extends from southwestern New Haven and southern Fairfield Counties in Connecticut, southward and westward through the southern half of Westchester County, New York. Approximately, 27 acres of red pine on the Wanaque Watershed and sixty ornamental red pines in Passaic County, New Jersey, were found infested with the scale this year. These have been cut and destroyed. A localized infestation of the scale found on ornamental Japanese black pine (Pinus thunbergii) in Roslyn, New York, is of special concern. In all, 35 trees were infested. The impact of this scale on black pine has not been determined. The main concern now is for the extensive plantings of this pine species along the seacoast and in other areas where it has been substituted for red pine because of its supposed resistance to the scale.

HEMLOCK SCALE (Fiorinia externa) Map 12

A special report on the hemlock scale may be found in the July issue (No. 2) of the Reporter. The known distribution of this scale continues as previously reported, with the exception that a new infestation was observed on roadside plantings along the Hutchinson River Parkway near Purchase in southern Westchester County, New York. Because of the potential threat of this scale to native stands of eastern hemlock, it is recommended that a special effort be undertaken to determine its distribution.

MAP 11
RED PINE SCALE
(MATSUCOCCUS RESINOSAE)

MAP 12
HEMLOCK SCALE
(FIORINIA EXTERNA)

Excellent control of the hemlock scale, using a drench spray of Cygon, has been reported by the University of Maryland. A heavy scale infestation in the Wissahickon Park of Philadelphia, Pennsylvania, was aerially sprayed by helicopter using Cygon 2.67E applied at the rate of 1-lb. actual in twenty gallons of water per acre. Little or no control was achieved from this operation.

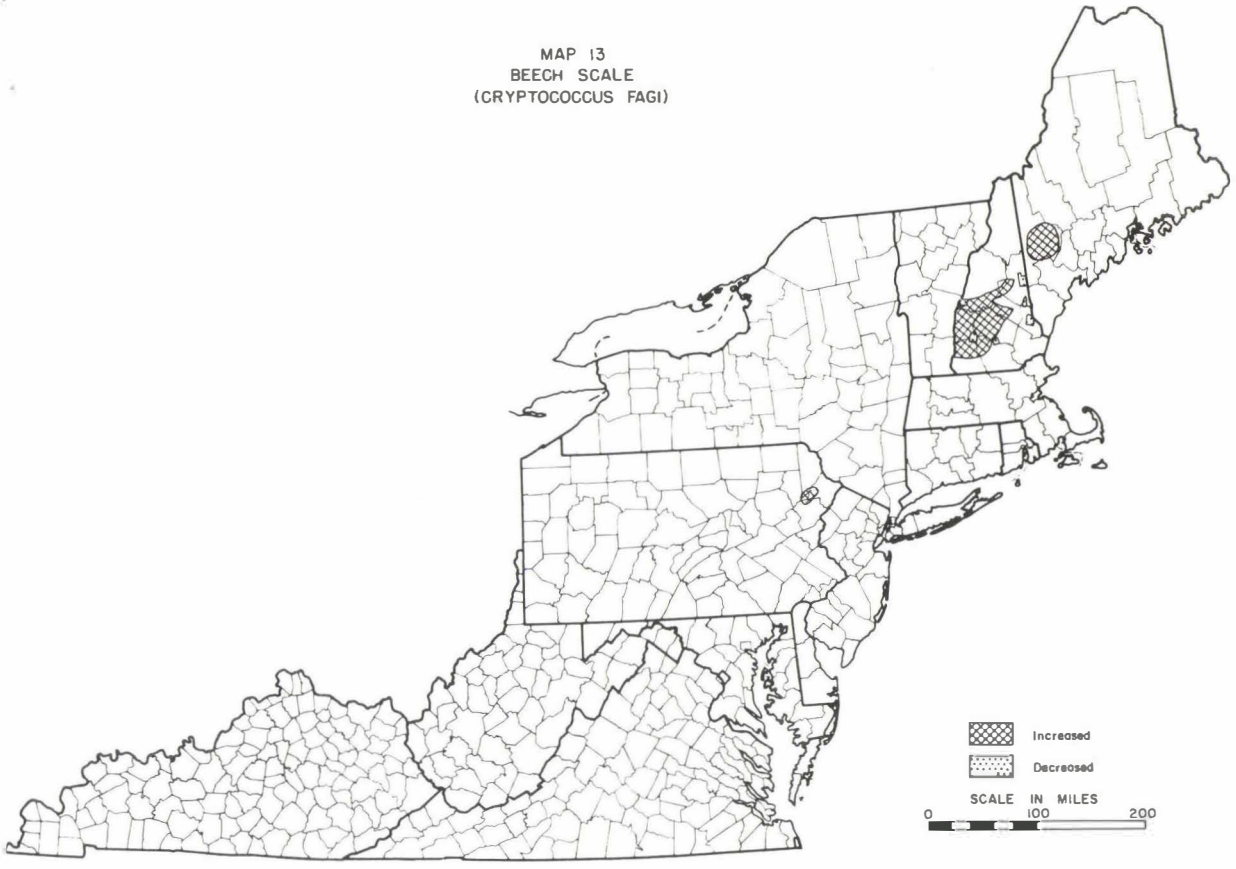
BALSAM WOOLLY APHID (Chermes piceae)

Damage to balsam fir in Maine by the balsam woolly aphid has decreased slightly, although it continues to be a serious problem particularly in the central part of the State. Ground surveys in the Bancroft area, south of Houlton, indicates that aphid infestations are slowly moving northward. Predation by the imported beetle Laricobius erichsonii continue to help reduce aphid populations in some of the areas where releases have been made. In western Oxford County, where aphid populations have been observed for several years, infestations are currently low, although localized increases in bole infestations have been reported as well as in southwestern Maine. In central and southern New Hampshire in Vermont, and New York, conditions have not changed since 1963.

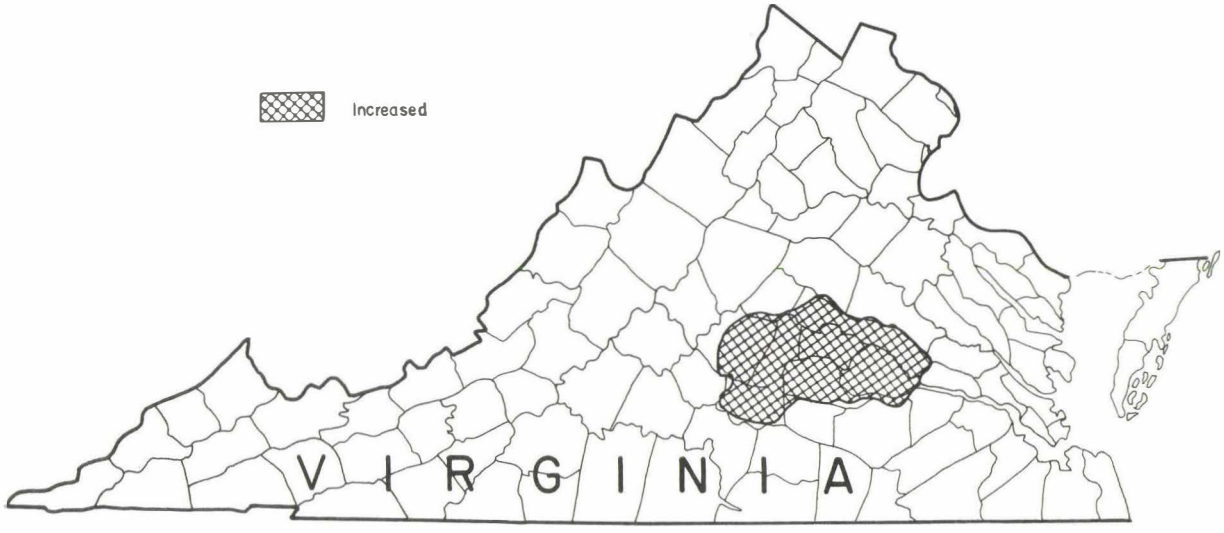
BEECH SCALE-NECTRIA COMPLEX (Cryptococcus fagi - Nectria coccinea var. faginata) Map 13

This scale-disease complex continues to be a serious problem in growing high quality beech wherever the two organisms occur together. Although the nectria is currently found only in Maine and New Hampshire, the scale has been reported from Maine, New Hampshire, Vermont, Massachusetts, New York and northeastern Pennsylvania. In western Maine, infestations of the scale increased materially, but a corresponding increase in nectria infections did not occur. In New Hampshire population decreases were observed in scattered localities in the southern half of the State, while a general increase in populations were noted in the western section of the State.

MAP 13
BEECH SCALE
(CRYPTOCOCCUS FAGI)



MAP 14
SOUTHERN PINE BEETLE
(DENDROCTONUS FRONTALIS)



Aerial observations, made during the first week of June, showed an apparent thinness of the crowns of beech in the Beartown-Manchester-Dorset areas of southern Vermont. Ground examinations, also in early June, did not detect any evidence of insect defoliation, but three species of scales /Oystershell scale (Lepidosaphes ulmi), beech scale (Cryptococcus fagi), and Xylococcus betulae / were observed on the boles and branches of many beech trees. A second ground examination in late July, during which several trees were felled for sampling, revealed heavy twig infestations of the Cryptococcus and Xylococcus scales. The latter species had apparently killed irregular portions of the twigs giving an overall warty appearance to the branches. The oystershell scale was also found on many of the small branches. Continued heavy infestations of beech in the Shelburne-Montpelier areas by Lepidosaphes have seriously affected beech in at least one area of east Montpelier. Damage to beech by these three scales has undoubtedly been aggravated by the prolonged drought conditions existing in Vermont.

The heavy scale infestation in the Tobyhanna State Park in Monroe County, Pennsylvania, continues without evidence of the nectria infection. Tree damage is now so severe that mortality is expected. Some 40 acres of scale infested beech were treated in September with two spray formulations (DDT - Malathion and Lindane) applied with a truck-mounted mistblower with hydraulic attachments. Preliminary examinations show good control with both formulations.

SOUTHERN PINE BEETLE (Dendroctonus frontalis) Map 14

After a slight decline last year, the southern pine beetle epidemic continues to be the major insect problem on the Piedmont of Virginia. Beetle activity is increasing in Prince Edward and Amelia Counties and in parts of Buckingham, Chesterfield, Goochland, Henrico and Powhatan Counties. Ips and black turpentine beetle activity is not as severe as in 1963. Salvage of beetle killed pines continues.

MISCELLANEOUS INSECTS

Insect Species	Host trees	Reported Distribution	Damage and Remarks
Birch casebearer (Coleophora salmani)	White birch	Northeastern Aroostook County, Maine	Increased defoliation in 1964.
Poplar leaf beetle (Probably Chrysomela tremulae)	Poplar and birch	Central Hancock County, Maine	Approximately 2500 acres heavily defoliated.
Willow flea beetle (Rhynchaenus rufipes)	Willow	Lower Kennebec Valley, Maine	Heavy defoliation and shoot mortality evident.
Arborvitae leaf-miners (4-specie complex)	Arborvitae	South-central Maine	Populations decreased considerably, foliage recovery good.
Larch casebearer (Coleophora laricella)	Larch	Central Vermont	Common, but not too important.
Pine Needle Miner (Exoteleia pinifoliella)	Virginia and pitch pine	Central Massachusetts, Northwestern Virginia, and New Jersey	Noticeable defoliation.
Spring Cankerworm (Paleacrita vernata) and The Linden looper (Erannis tiliaria)	Mainly on oaks and northern hardwoods	Pennsylvania and New Jersey	Noticeable defoliation. In complex with several other defoliators.

Insect Species	Host trees	Reported Distribution	Damage and Remarks
Fall Webworm (Hyphantria cunea)	All species of hardwoods	Maine, N. H., R. I., Maryland, West Virginia, Shenandoah National Park, Blue Ridge Parkway in Virginia.	Populations continued to decline over most of this area. Some localized heavy infestations observed.
Pine Sawflies (Neodiprion pratti paradoxicus, N. pini-rigidae, N. pinetum, Diprion similis	Pines	New Jersey	Scattered light defoliation.
Orange-striped Oakworm (Anisota senatoria)	Oaks	New Jersey	The 1963 outbreak declined considerably, although some heavy defoliation was noted in Ocean County.
Pine Twig Gall Scale (Matsucoccus gallicola)	Pitch pine	New Jersey	Some twig branch and tree mortality noted in Ocean County.
Tuliptree Scale (Toumeyella liriodendri)	Yellow-poplar and Magnolia	New Jersey and West Virginia	Populations at a low level in New Jersey. Heavy defoliation reported in West Virginia.
Pit-making Oak Scale (Asterolecanium minus)	Oaks	Pennsylvania and West Virginia	Abundant and increasing

Pine tip moth complex (Rhyacionia frustrana R. rigidana)	Pines	Pennsylvania, New Jersey, Virginia and West Virginia	Damage continues to be severe.
European Pine Shoot Moth (Rhyacionia buoliana)	Pines	Maine, New Jersey and Pennsylvania	Populations on the decrease in Maine and on the Allegheny National Forest. On the increase in Pennsylvania and New Jersey.
Zimmerman Pine Moth (Dioryctria zimmermani)	Austrian and Loblolly Pines	Luzerne County, Pennsylvania, and Maryland.	Killed Austrian pine in Pennsylvania. Infesting loblolly pine cones in Maryland. This is a new record for Maryland.
White-pine shoot borer (Eucosma gloriola)	White and Red Pines	Pennsylvania and New Jersey	Serious pest in plantations.
Leaf-mining weevil (Odontopus calceatus)	Yellow-poplar	Kentucky	Caused considerable defoliation in eastern Kentucky.
A Hardwood Sawfly (Craterocercus sp.)	White Oak	Monongahela National Forest (West Virginia)	Caused up to 50% defoliation on a large acreage of mostly white oak.

Insect Species	Host trees	Reported Distribution	Damage and Remarks
Leaf-roller sawfly (Pamphilius sp.)	Red Oak	Linn Run State Park, Westmoreland County, Pennsylvania	Caused 20 - 100% defoliation of red oaks scattered over 1200 acres. This is the first report of this sawfly on oak.
Walkingstick (Diapheromera femorata)	Oaks and Hickories	Clearfield County, Pa.	Defoliation ranged from 50% to 80% on 170 acres.
Ambrosia Beetle (Monarthrum mali)	Hard Maple Lumber	Vermont	Infesting sawlogs at three mill sites.

ANNOSUS ROOT ROT (Fomes annosus)

Fomes annosus is generally distributed in varying degrees of intensity throughout the Region. In spite of abnormally dry weather in 1965 new infection centers were found in various places. Apparently underground spread is not seriously affected by below normal precipitation.

Most infections are found in coniferous plantations. Numerous large fresh sporophores were observed on stumps in a red pine plantation in central Maine. In New Jersey spread was noted in several red pine plantings on the Newark Watershed properties. In Virginia, F. annosus is mainly found in the eastern section on loblolly pine. Several white pine plantations on the George Washington National Forest have F. annosus infection with a moderate amount of mortality.

The Virginia Division of Forestry is conducting a resurvey for F. annosus in the 40 pine plantations originally checked in 1960. These plantations have been thinned in the meantime. Data on soils and tree mortality are also being taken.

A preliminary report on the evaluation of stump treatments on a pitch and red pine plantation in the Dry River Ranger District of the George Washington National Forest showed that there were no significant differences in the effectiveness between creosote, urea and borate treatments in preventing stump surface infection by Fomes annosus. This may be significant as previous studies have indicated that creosote was not as effective in preventing stump surface infection as urea and borate. This evaluation will be continued over the next five years.

LITTLELEAF DISEASE (Phytophthora cinnamomi)

A considerable volume of timber is being lost to this disease in Kentucky especially on the Williamsburg and Stearns Ranger Districts of the Cumberland National Forest. Plans to investigate the possibility of reducing the losses on these two districts by enhancing tree vigor through thinning at a critical age are being considered.

In Virginia damage is considered moderate and the majority of the losses have occurred in Fluvanna and Louisa Counties.

SEEDLING ROOT ROT (Cylindrocladium scoparium)

Recently Norway and white spruce seedlings in the Pennsylvania Mont Alto Nursery experienced considerable mortality due to a root rot. Isolations from the diseased roots yielded a significant amount of Cylindrocladium scoparium.

SPRUCE DIEBACK

On the Green and White Mountain National Forests in Vermont and New Hampshire, dieback of high elevation red spruce has been observed. Tree conditions vary from apparently healthy to dead. A thinness to the foliage seems to be the most obvious symptom. This area will be kept under observation.

WHITE PINE BLISTER RUST (Cronartium ribicola)

Drought conditions throughout most of the Region were evidently the cause of light infections on ribes. New infections on white pine are expected to be light.

In the Tug Hill area of New York State a study is being carried out to determine whether low pruning of selected white pine crop trees will reduce blister rust infection. Although the rust hazard is high in this area blister rust infections are confined mainly to the lower branches. Low pruning, therefore, will not only remove the most susceptible target area but improve the quality of the trees as well.

WHITE PINE NEEDLE BLIGHT

No lessening in the severity of this problem was noted or reported this year. This condition is particularly severe in the towns of Yarmouth, Freeport and Wiscasset, Maine. No outstanding changes in stands being damaged by this condition in Merrimack County, New Hampshire have been reported. Typical symptoms are shortening of needles, chlorosis, browning and reddening of the needle tips, fine yellow spotting over the length of the needle and finally, needle cast. The above symptoms produce a thin crown which becomes progressively thinner until death occurs.

WHITE PINE EMERGENCE TIPBURN (cause unknown)

This condition has been observed in a widespread area extending from Pennsylvania to Kentucky. The new needles are usually affected, but no tree mortality has been reported as resulting from this malady.

LARCH CANKER SURVEY

Larch canker survey crews were employed on December 13, 1964 to continue the inspection of larch trees for the presence of the larch canker infection caused by the fungus Trichoscyphella (Dasyscypha) willkommii. The operation is centered in the vicinity of Hamilton, Massachusetts. Approximately 2200 trees remain to be examined. It is expected that the survey will be completed on or before the middle of January 1965. The July, 1964 issue of the Northeastern Forest Pest Reporter briefly outlines the history of this survey in Massachusetts.

OAK MORTALITY

Two areas in Maine where oaks were dying were investigated. Both areas had been logged in recent years. There seems to exist a direct correlation between the percentage of dead crown and the location in the roots, root collar and lower trunk of the advancing mycelium of the fungus, Armillaria mellea. Cause of this condition can only be postulated. The stumps are food bases for the fungus. Insects and dry conditions tend to weaken the trees permitting this fungus to invade the roots of once vigorous trees.

HARDWOOD DECLINE (General)

Hardwood decline was evident throughout the Region, being most severe on species belonging to the red oak group. Other commercial hardwood species affected included sugar and red maple and black cherry. Drought conditions have been suspected as a contributing factor in hardwood decline. Conifer decline and mortality in six counties in Pennsylvania is also attributed partially to the 1962 - 1964 drought.

ASH DIEBACK

Reports from New York indicate no lessening in the intensity of this problem. Observations made in Massachusetts, Connecticut, Vermont and New Hampshire during the summer indicate no decrease in symptom severity. Condition particularly noticeable on the Green Mountain National Forest.

OAK WILT (Ceratocystis fagacearum) Map 15

Post control appraisal in Pennsylvania, West Virginia and Maryland to evaluate oak wilt control methods was continued in 1964. Some difficulty in locating new infection centers to satisfy the requirements of the study in Pennsylvania was encountered. The remeasurement of previously established post control plots showed that some were unsatisfactory in meeting certain specifications, and were discontinued.

No oak wilt control was conducted in Kentucky since the post control appraisal showed no appreciable difference between treated and untreated areas. Aerial surveys will be made each summer in Kentucky covering 2 1/2 percent of the oak wilt susceptible forest to keep close check on the trend of the disease.

In general there was little change in the oak wilt situation in 1964. The only appreciable increase was on the George Washington National Forest in Virginia.

MAP 15
OAK WILT
(CERATOCYSTIS FAGACEARUM)